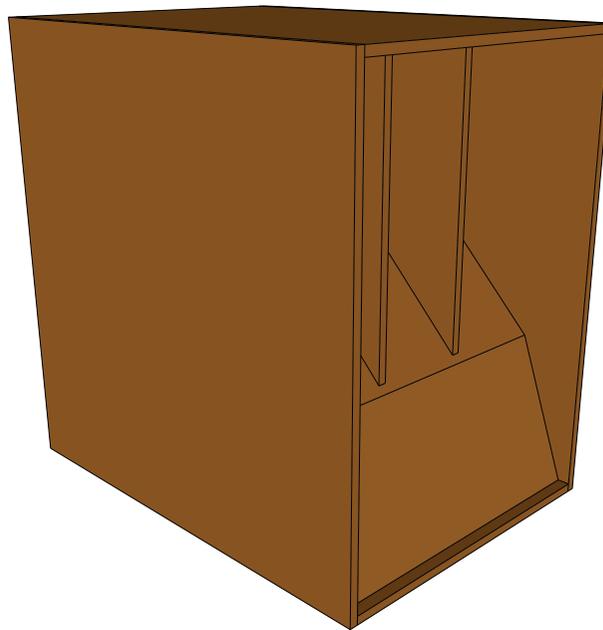




PROFESSIONAL  
LOUDSPEAKERS

## APPLICATION NOTE



BUILDING AN EFFECTIVE, HIGH POWER  
HORN LOADED 18" SUBWOOFER

# KEY FEATURES

- > High performance 1 x 18" subwoofer system
- > Multiple driver choice is possible: 18LW2400 or 18NLW9400

**18LW2400** woofer key features:  
 4" interleaved sandwich voice coil (ISV)  
 Double Silicon Spider (DSS)  
 Double Demodulating Rings (DDR)  
 1200W AES power handling

**18NLW9400** woofer key features:  
 4" interleaved sandwiched voice coil (ISV)  
 Double silicon spider (DSS)  
 Neodymium magnet  
 1200W AES power handling



18LW2400

## GENERAL SPECIFICATIONS

NOMINAL DIAMETER	460 mm (18 in)
RATED IMPEDANCE	8 Ohm
AES POWER	1200W
PROGRAM POWER	2400W
PEAK POWER	7000W
SENSITIVITY	98 dB
FREQUENCY RANGE	31 ÷ 2500 Hz
POWER COMPRESSION @-10dB	0.7 dB
POWER COMPRESSION @-3dB	1.5 dB
POWER COMPRESSION @0dB	2.2 dB
MAX RECOMM. FREQUENCY	500 Hz
RECOMM. ENCLOSURE VOLUME	130 ÷ 350 lt (4.59÷12.36cuft)
MINIMUM IMPEDANCE	6.3 Ohm at 25°C
MAX PEAK TO PEAK EXCURSION	50 mm (1.97 in)
VOICE COIL DIAMETER	100 mm (4 in)
VOICE COIL WINDING MATERIAL	Copper
SUSPENSION	Triple roll, Polycotton
CONE	Straight ribbed, fiberglass reinforced cellulose

## THIELE SMALL PARAMETERS

Fs	35 Hz
Re	5 Ohm
Sd	0,1225 sq. mt. (189,88 sq. in.)
Qms	7.2
Qes	0.32
Qts	0.31
Vas	230 lt. (8.12 cuft)
Mms	192 gr. (0,42 lb)
BL	25,6 Tm
Linear mathematical Xmax	± 9,5 mm (± 0,38 in)
Le (1kHz)	1.35 mH
Ref. Efficiency 1W@1m (half space)	96.7 dB

# KEY FEATURES

- > High performance 1 x 18" subwoofer system
- > Multiple driver choice is possible: 18LW2400 or 18NLW9400

**18LW2400** woofer key features:  
 4" interleaved sandwich voice coil (ISV)  
 Double Silicon Spider (DSS)  
 Double Demodulating Rings (DDR)  
 1200W AES power handling

**18NLW9400** woofer key features:  
 4" interleaved sandwiched voice coil (ISV)  
 Double silicon spider (DSS)  
 Neodymium magnet  
 1200W AES power handling



18NLW9400

## GENERAL SPECIFICATIONS

NOMINAL DIAMETER	460 mm (18 in)
RATED IMPEDANCE	8 Ohm
AES POWER	1200W
PROGRAM POWER	2400W
PEAK POWER	7000W
SENSITIVITY	98 dB
FREQUENCY RANGE	30 ÷ 2500 Hz
POWER COMPRESSION @-10dB	0.7 dB
POWER COMPRESSION @-3dB	1.5 dB
POWER COMPRESSION @0dB	2.2 dB
MAX RECOMM. FREQUENCY	500 Hz
RECOMM. ENCLOSURE VOLUME	110 ÷ 350 lt (3.9÷12.36cuft)
MINIMUM IMPEDANCE	6.1 Ohm at 25°C
MAX PEAK TO PEAK EXCURSION	50 mm (1.97 in)
VOICE COIL DIAMETER	100 mm (4 in)
VOICE COIL WINDING MATERIAL	Copper round wire
SUSPENSION	Triple roll, Treated Polycotton
CONE	Straight ribbed, fiberglass reinforced cellulose

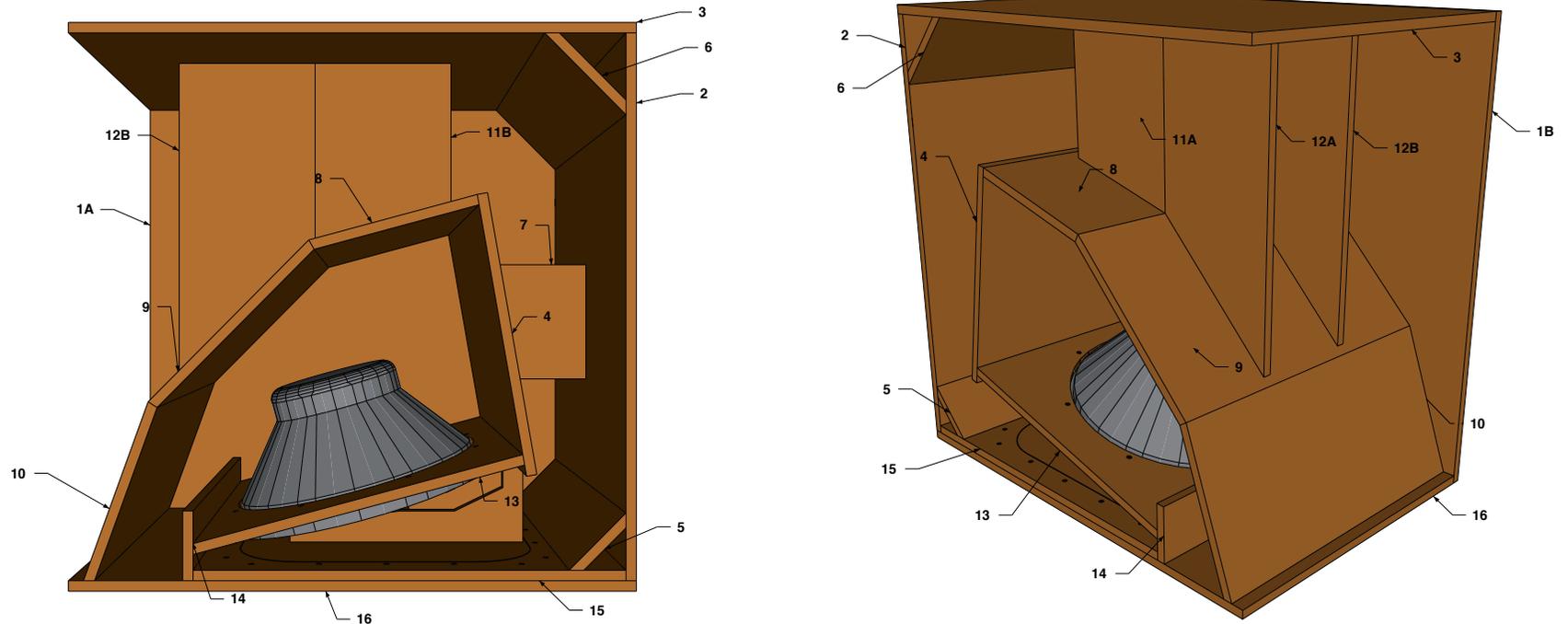
## THIELE SMALL PARAMETERS

Fs	35 Hz
Re	5 Ohm
Sd	0,1225 sq. mt. (189,88 sq. in.)
Qms	6,10
Qes	0.28
Qts	0.26
Vas	268 lt. (9.47 cuft)
Mms	180 gr. (0.40 lb)
BL	26 Tm
Linear mathematical Xmax	± 9,5 mm (± 0,37 in)
Le (1kHz)	1.90 mH
Ref. Efficiency 1W@1m (half space)	97.4 dB



# KEY FEATURES

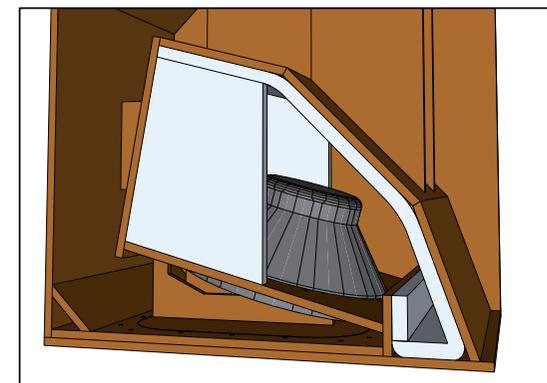
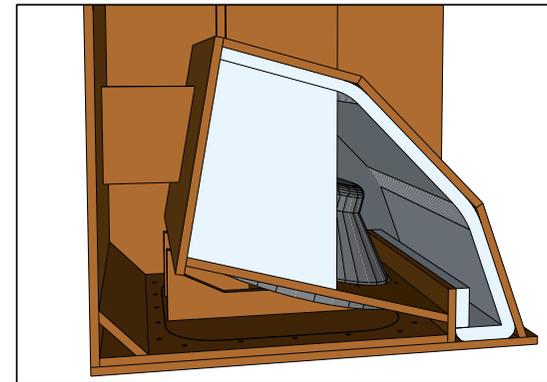
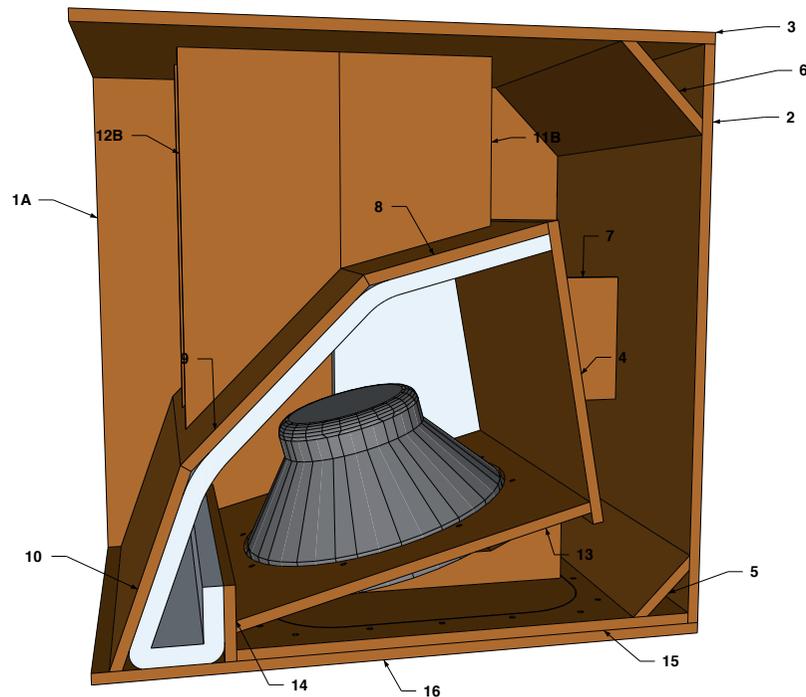
- > The enclosure should be made of Baltic birch plywood (15mm thickness)
- > Bolts are M6x35mm
- > M6 T-Nuts are recommended
- > Handling, rigging and connectors are user's choice



INTERNAL VIEW

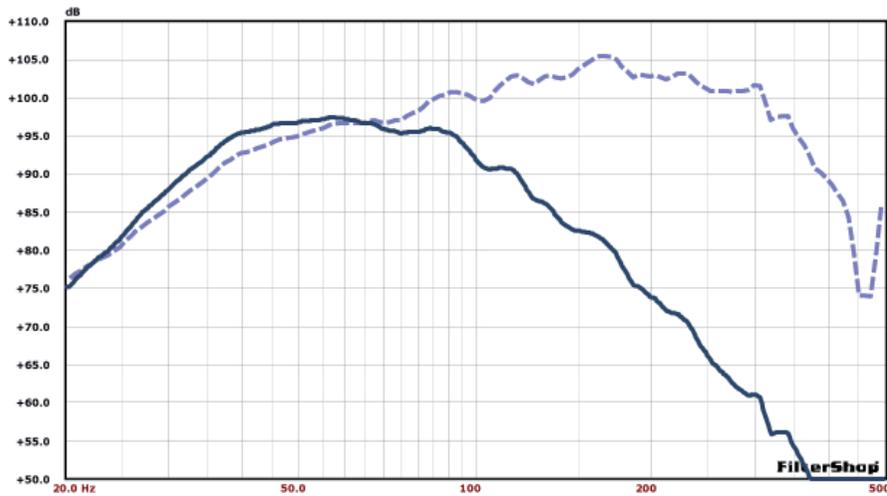
# KEY FEATURES

- > It's recommended to well damping the cabinet interior
- > You should see an example of the required dampening on the image on the next page
- > An high density dampening material, such as Dacron or other synthetic fibers, is required for better performance

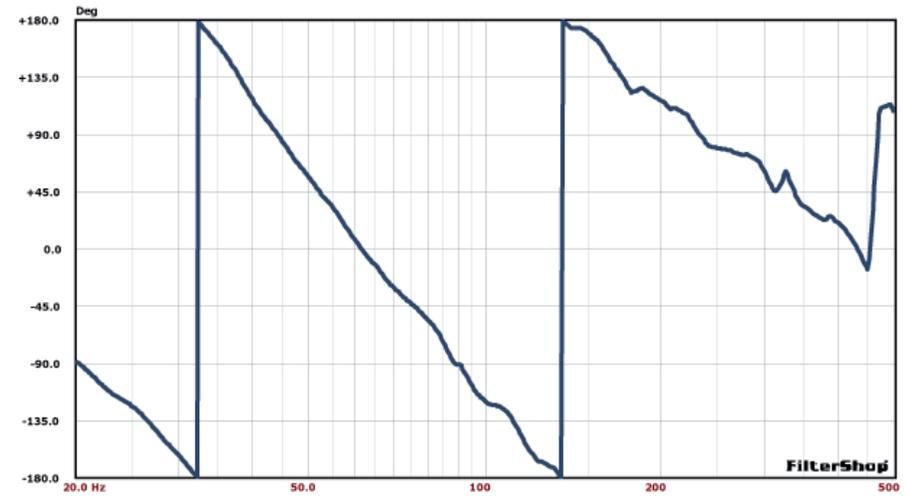


DAMPING MATERIAL

# UNFILTERED MAGNITUDE RESPONSE, 2.83V/1M AND RELATIVE PHASE RESPONSE WITH 18LW2400

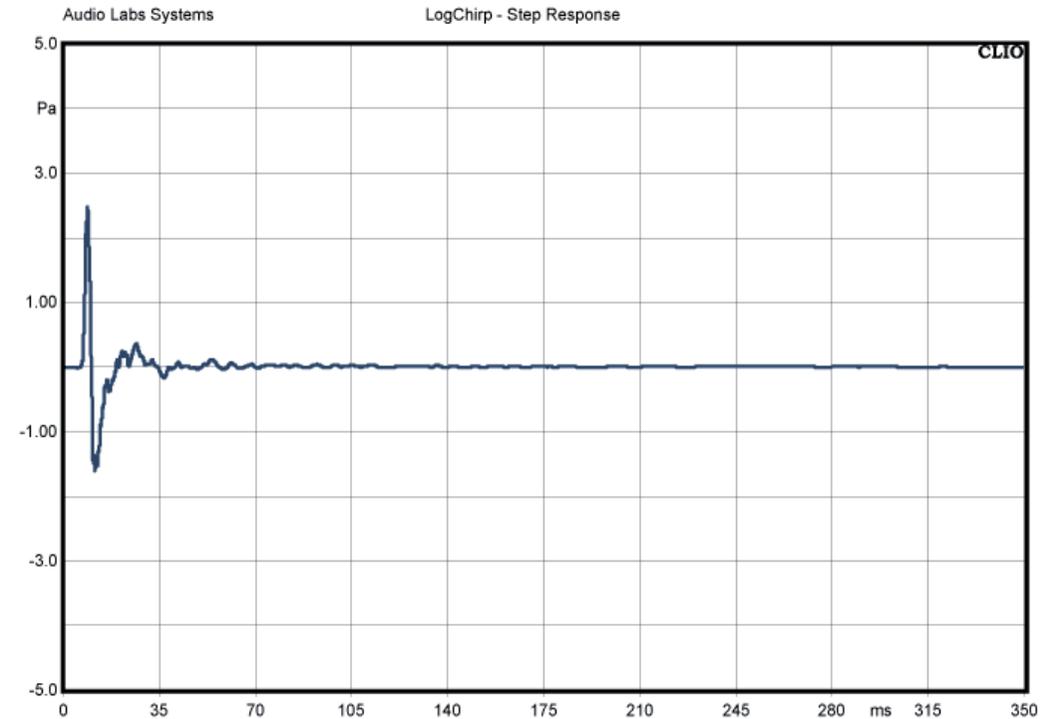
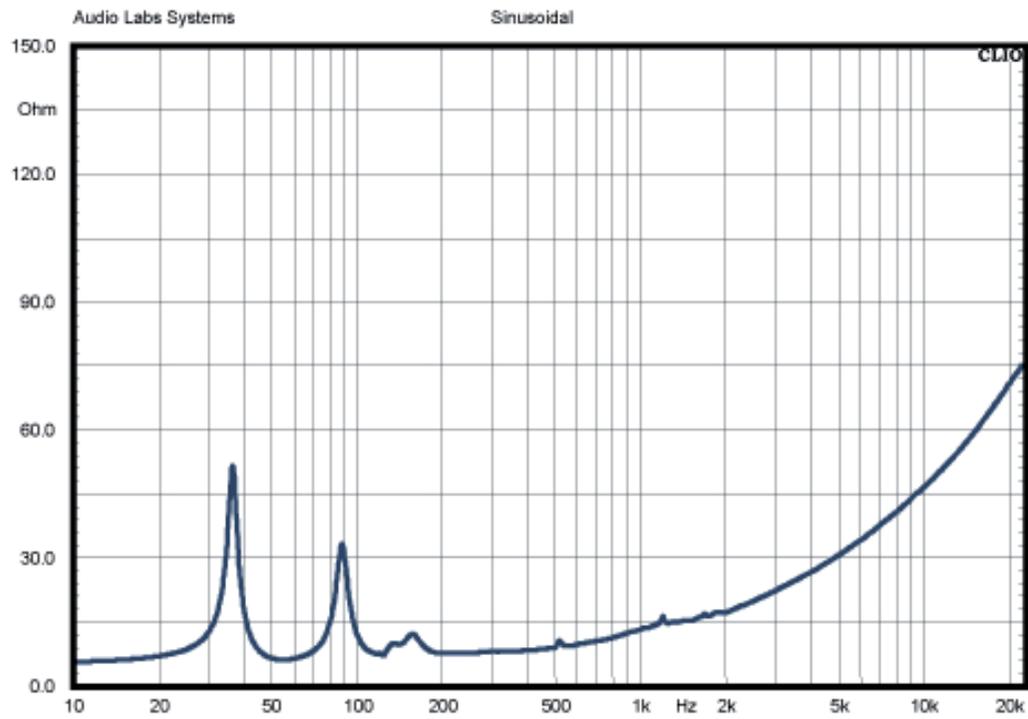


MAGNITUDE RESPONSE

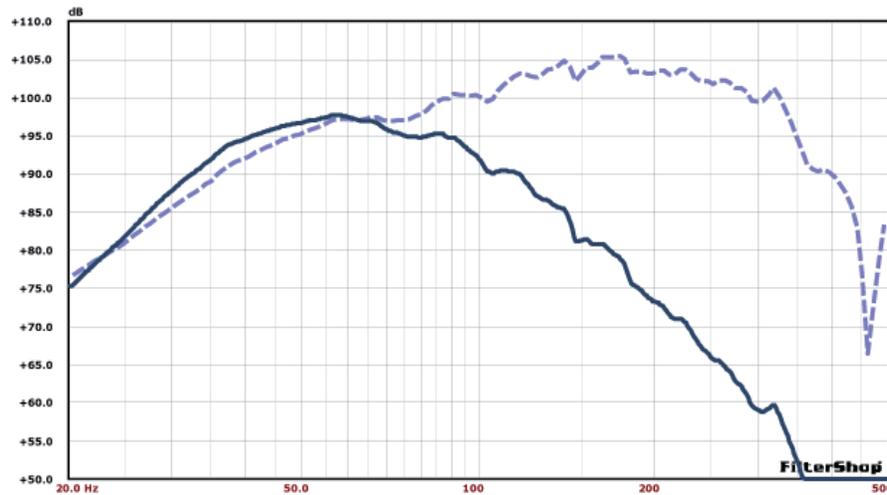


PHASE RESPONSE

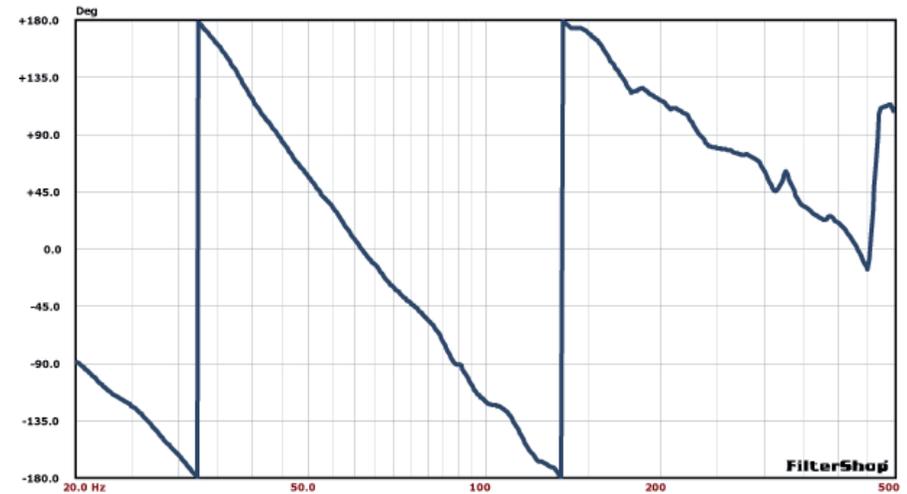
# IMPEDANCE AND STEP RESPONSE WITH 18LW2400



# UNFILTERED MAGNITUDE RESPONSE, 2.83V/1M AND RELATIVE PHASE RESPONSE WITH 18NLW9400

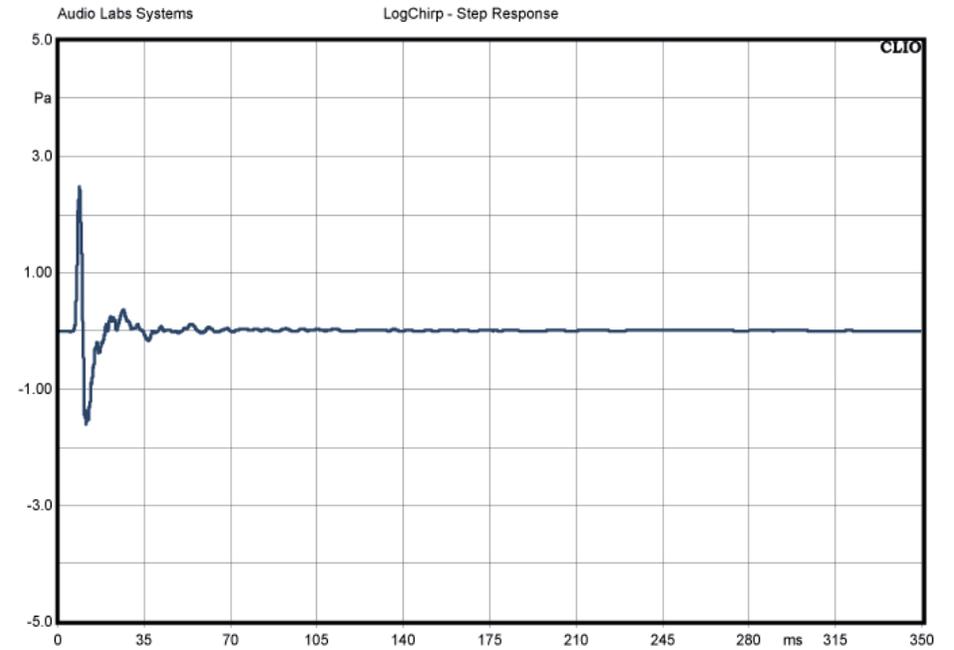
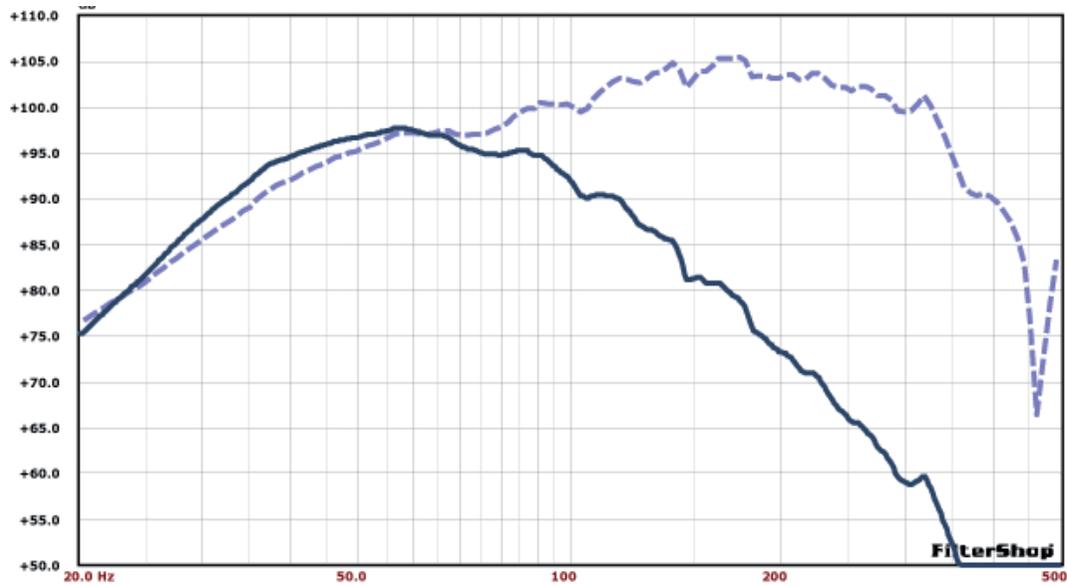


MAGNITUDE RESPONSE

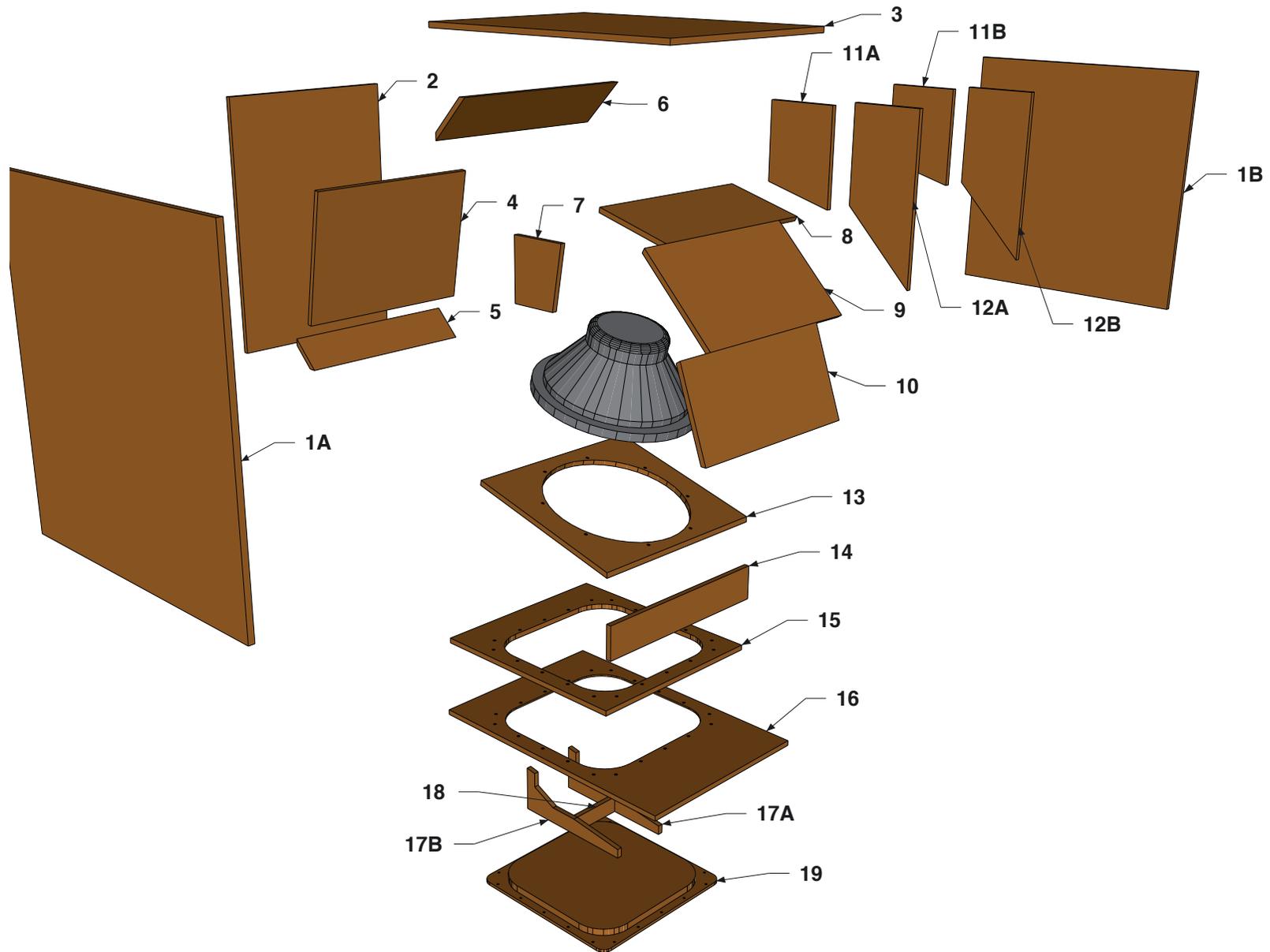


PHASE RESPONSE

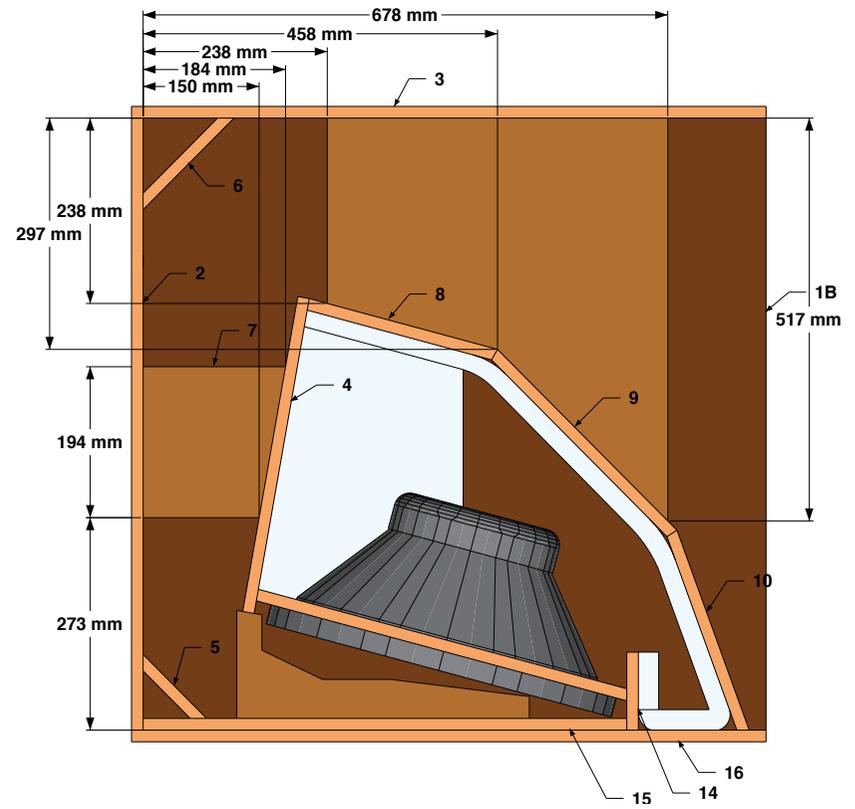
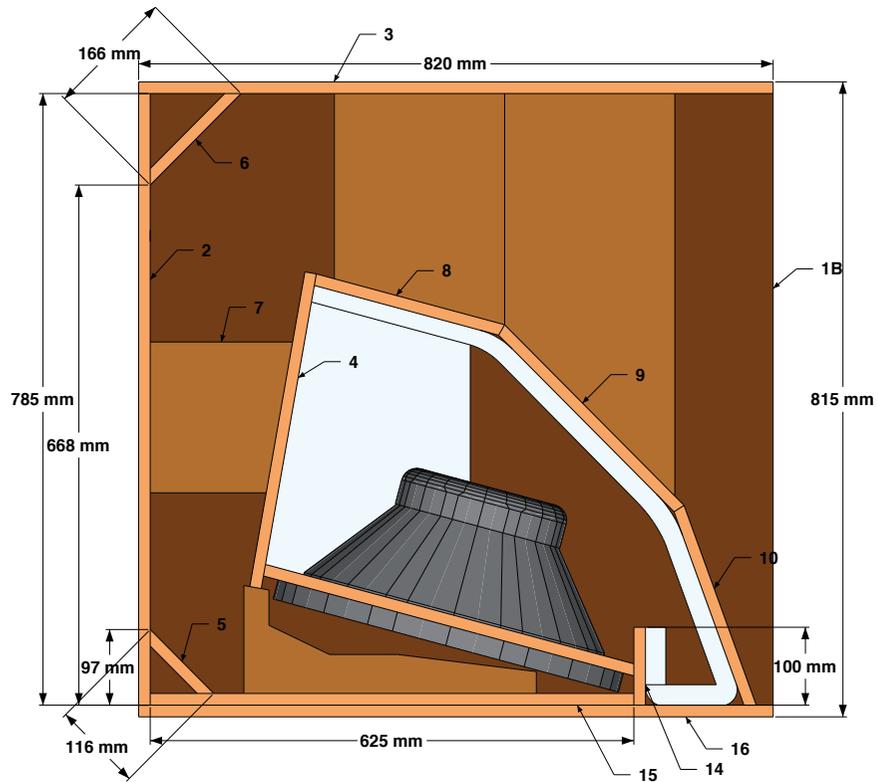
# IMPEDANCE AND STEP RESPONSE WITH 18NLW9400



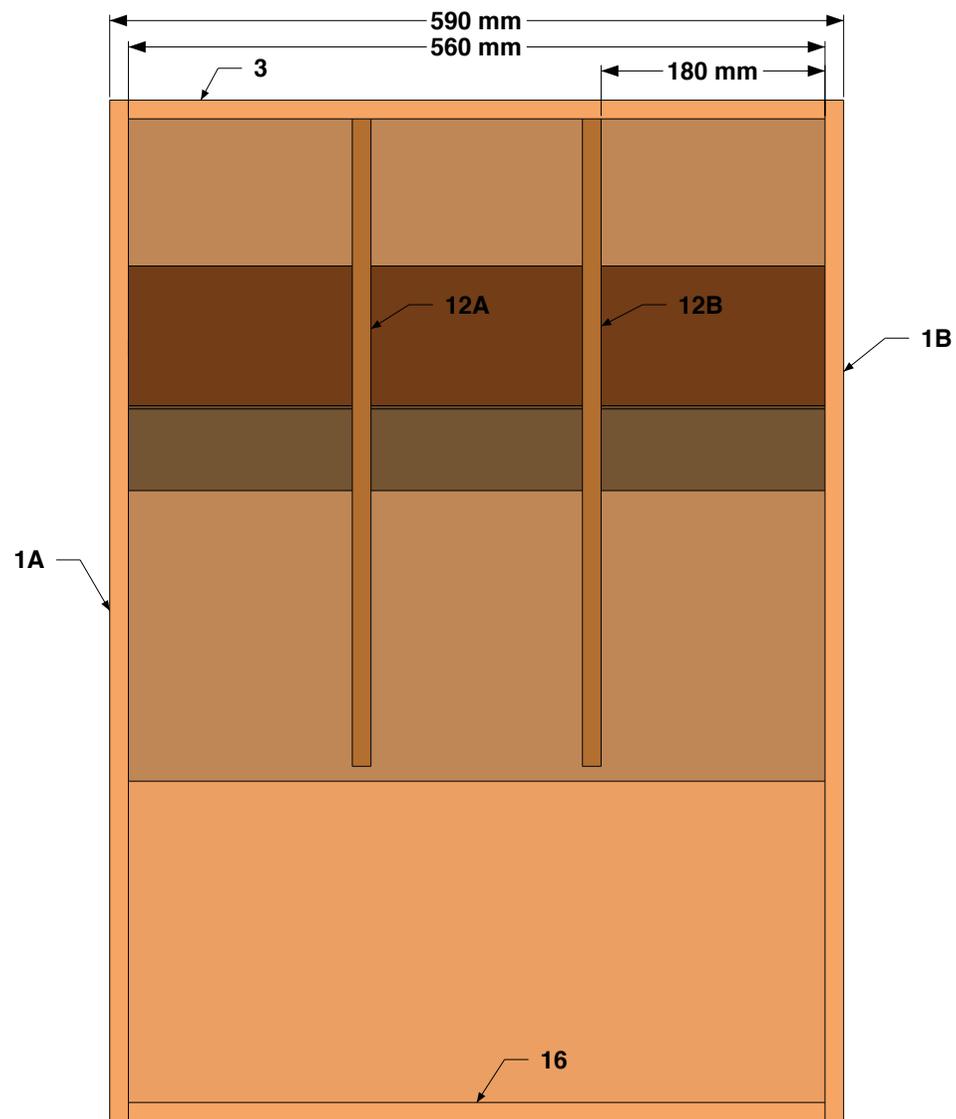
# EXPLODED VIEW



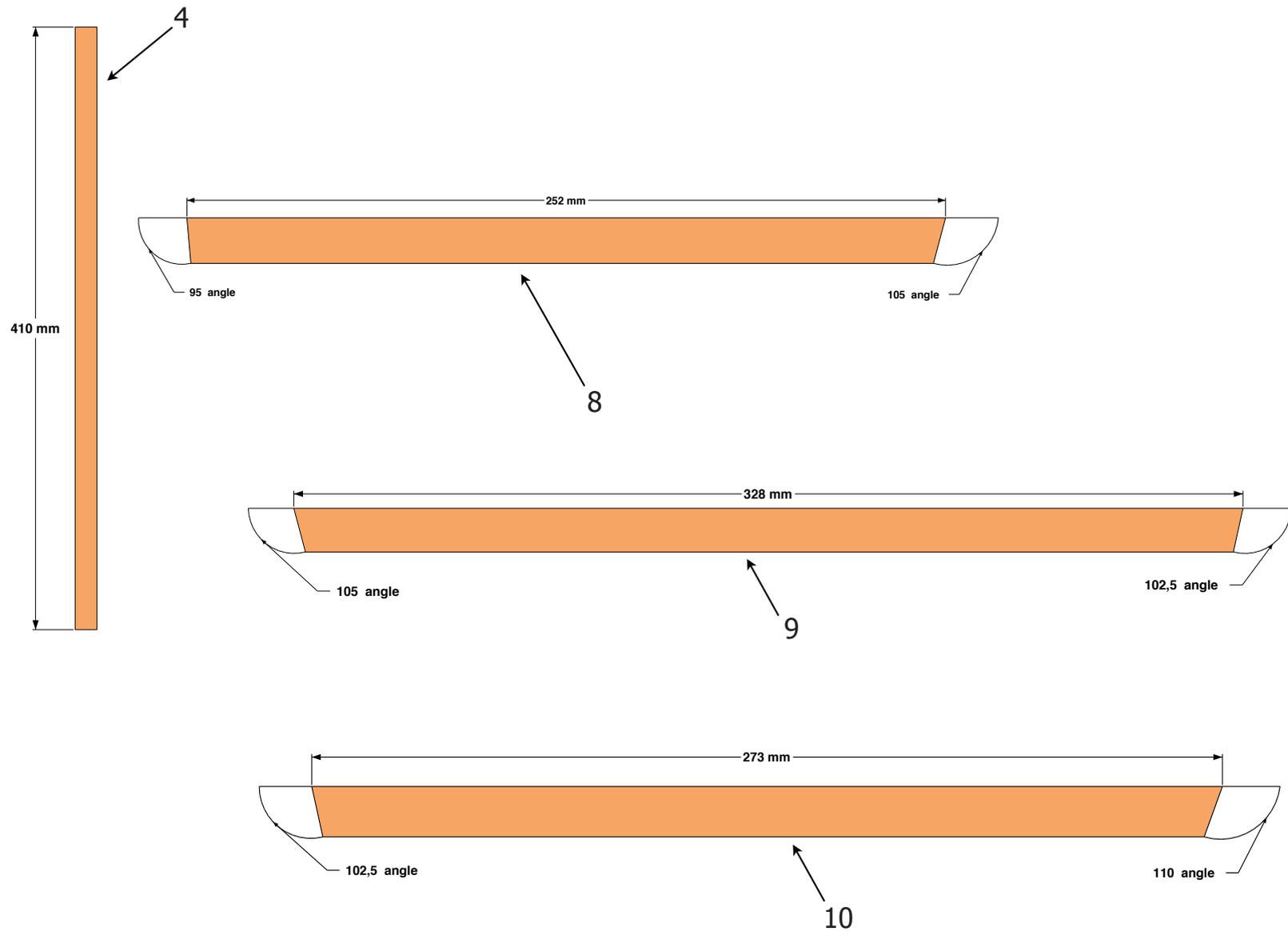
# SIDE VIEW



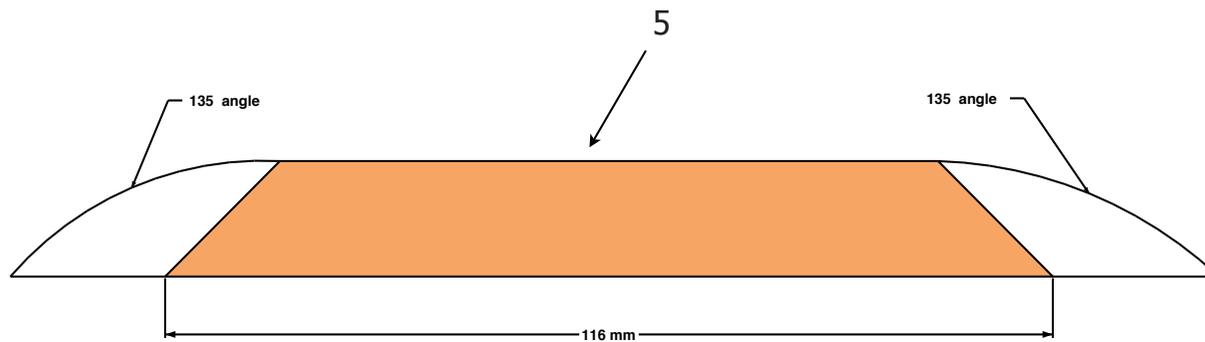
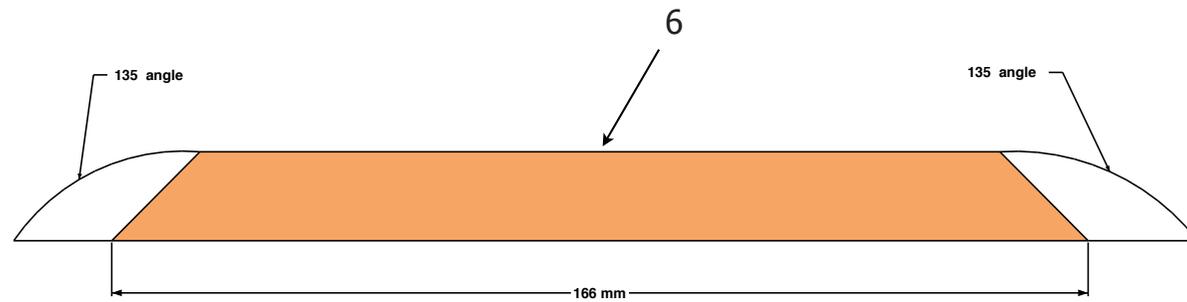
# FRONT SIDE



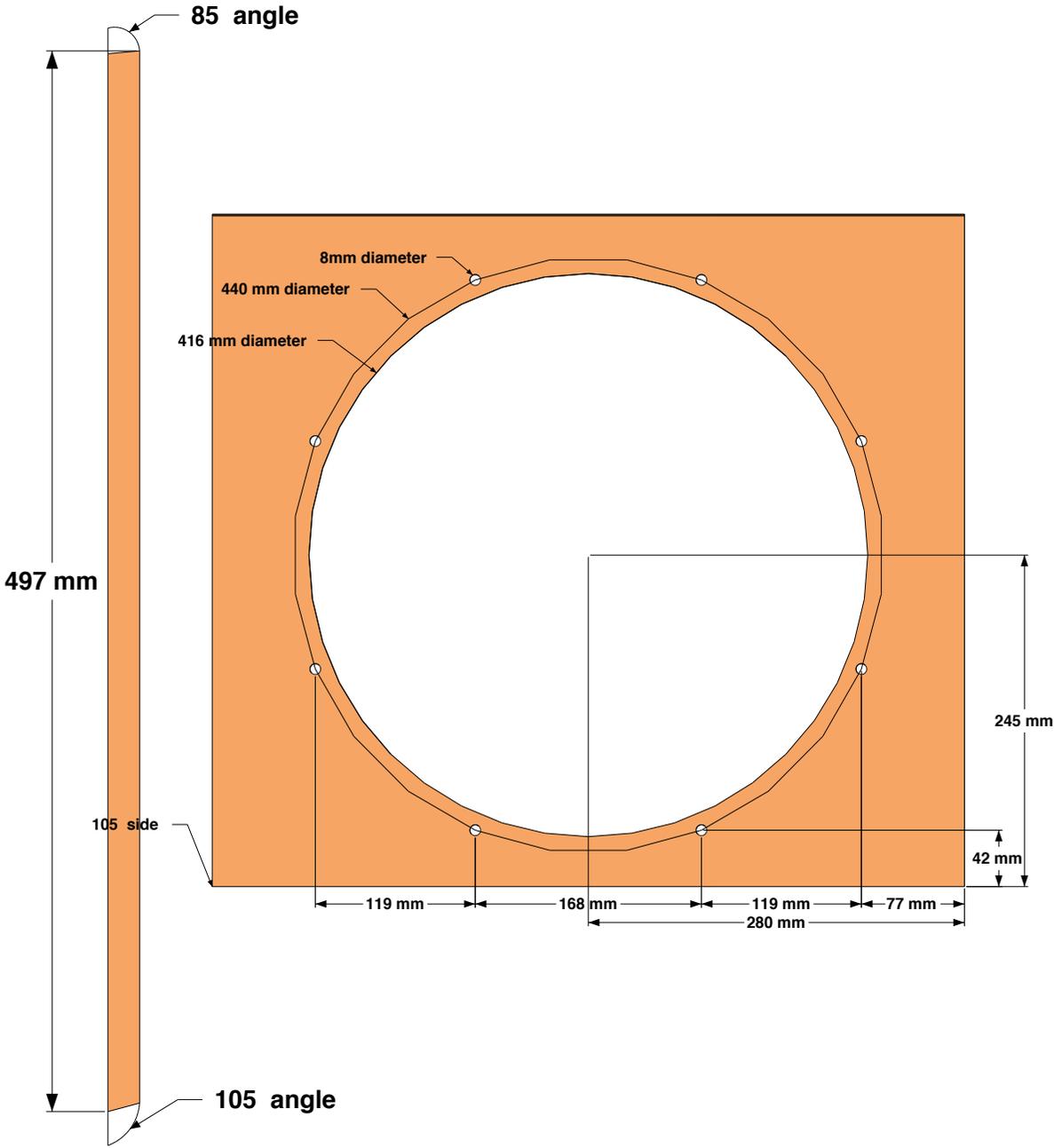
# HORN DETAILS



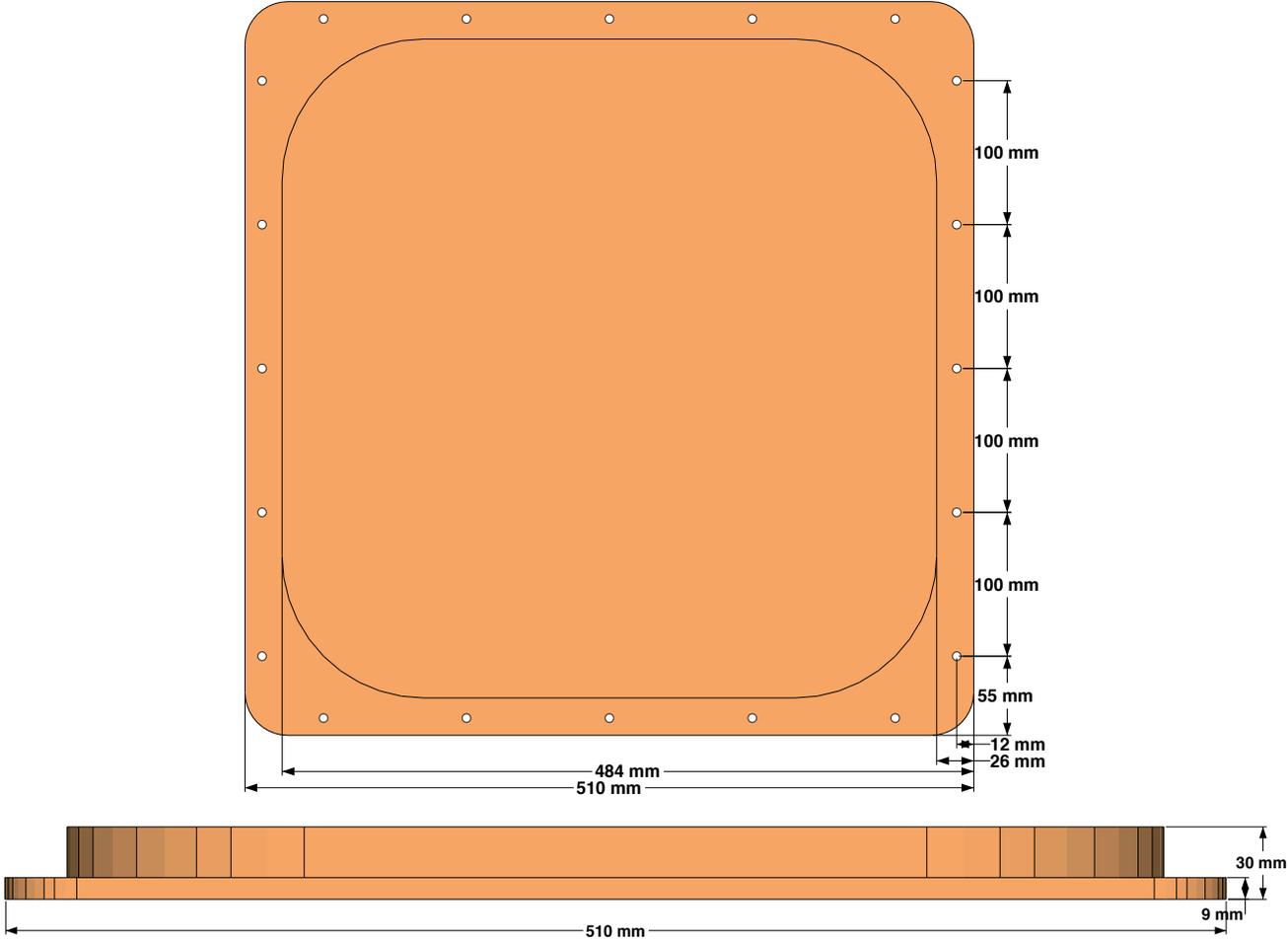
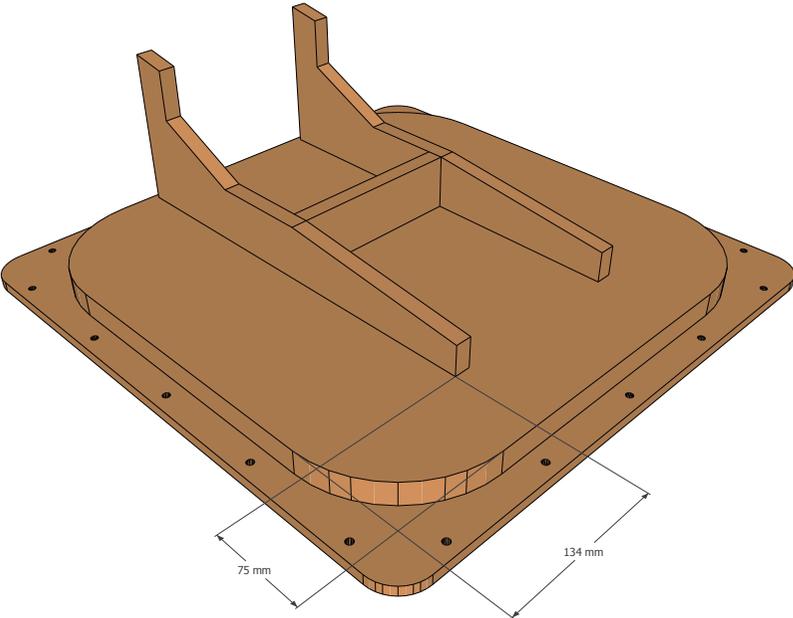
# REAR DETAILS



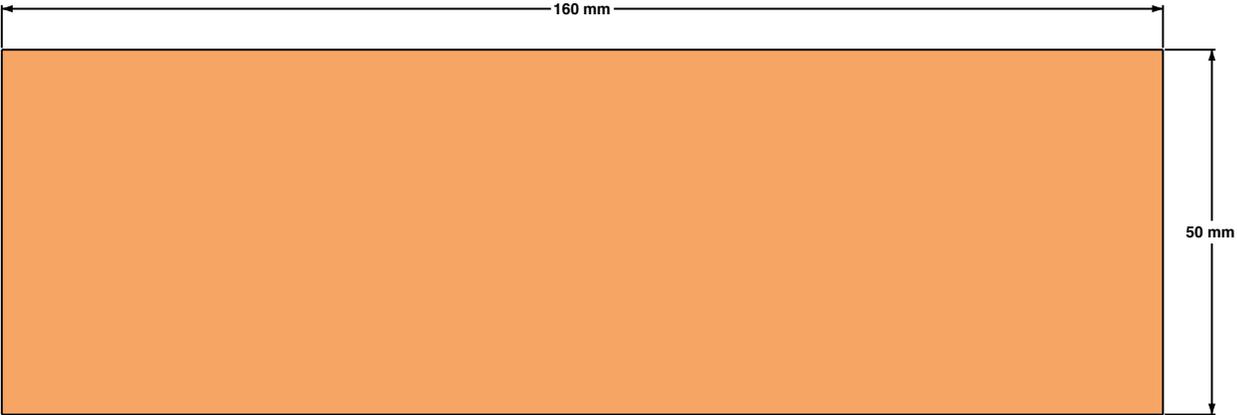
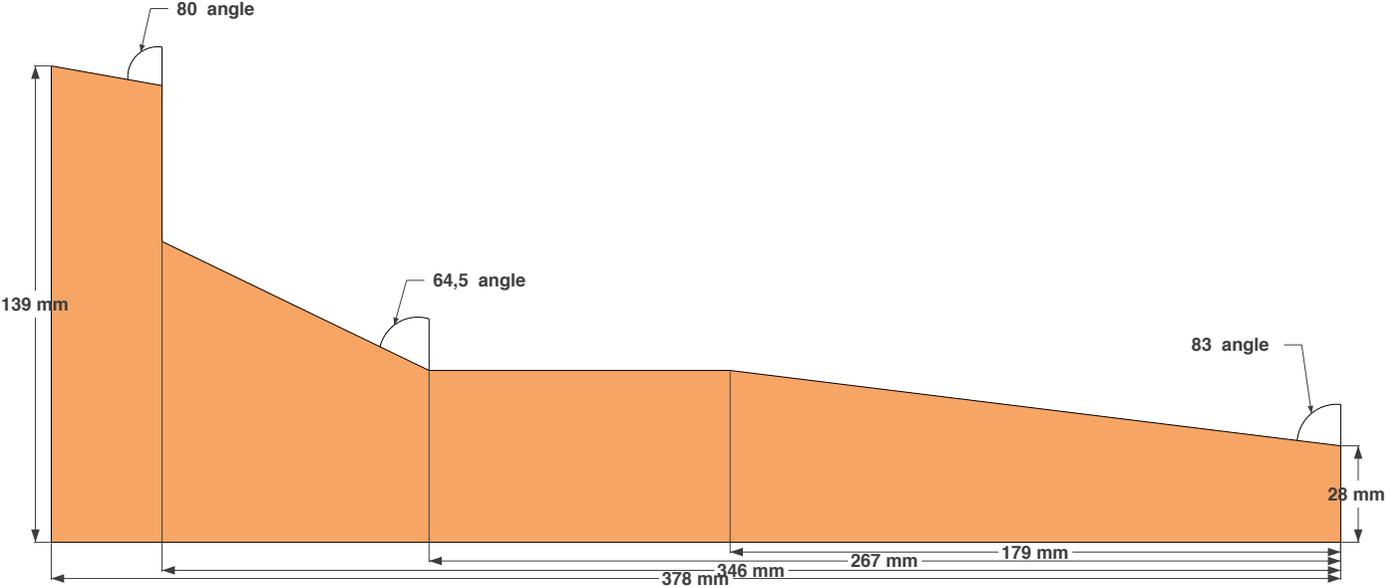
# WOOFER DETAILS



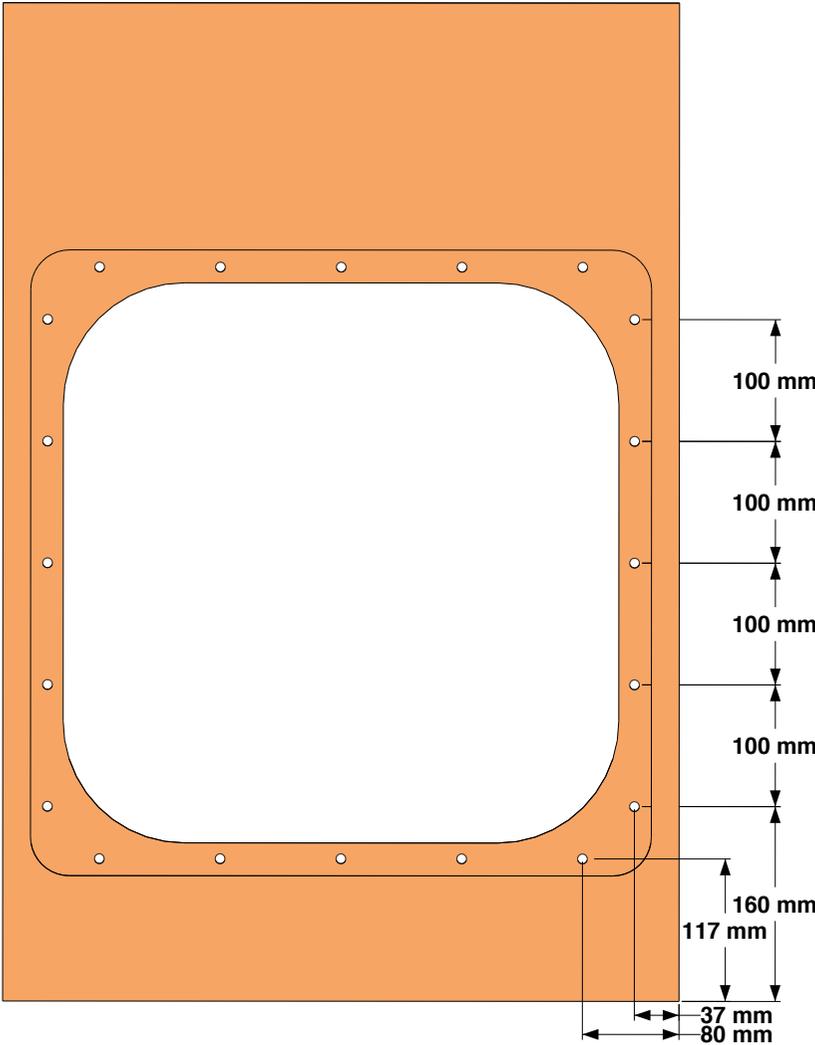
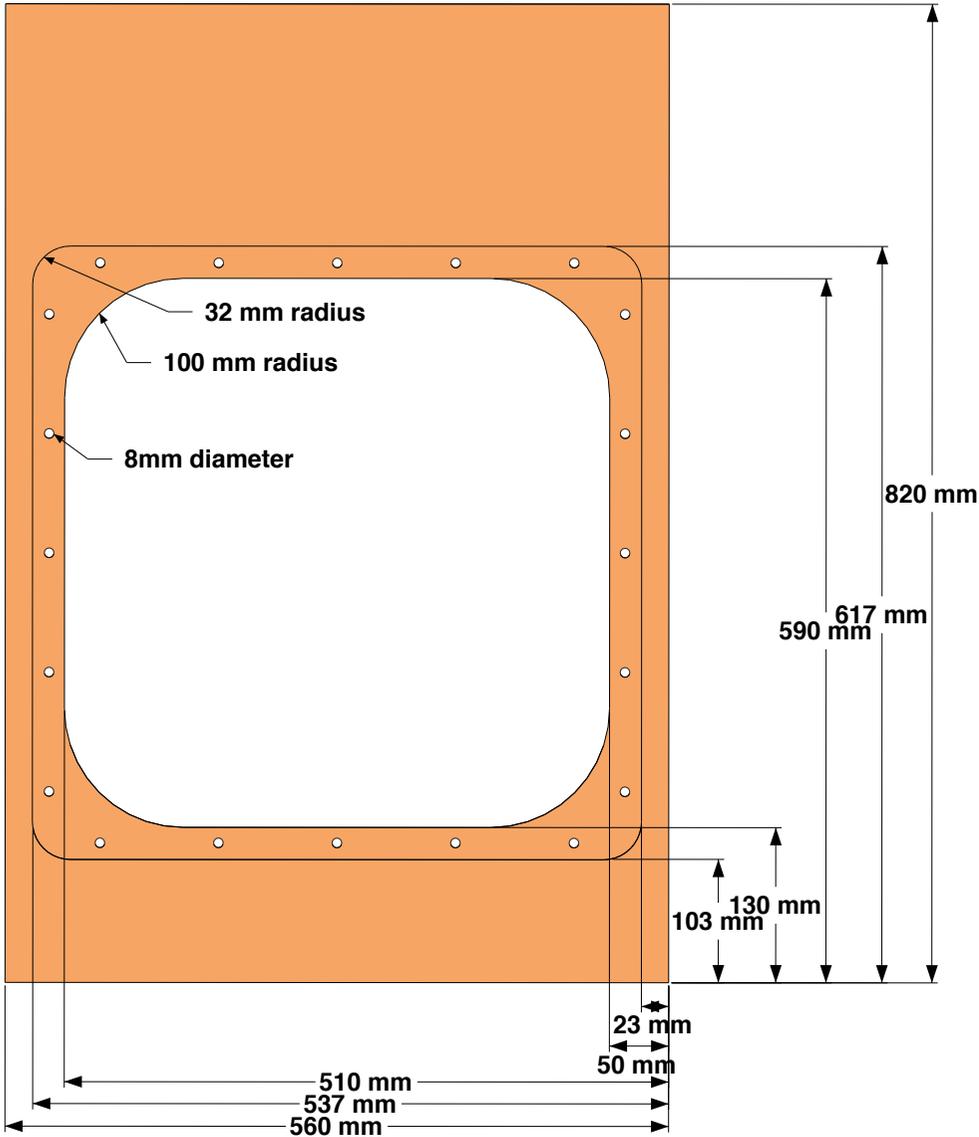
# BOTTOM VIEW



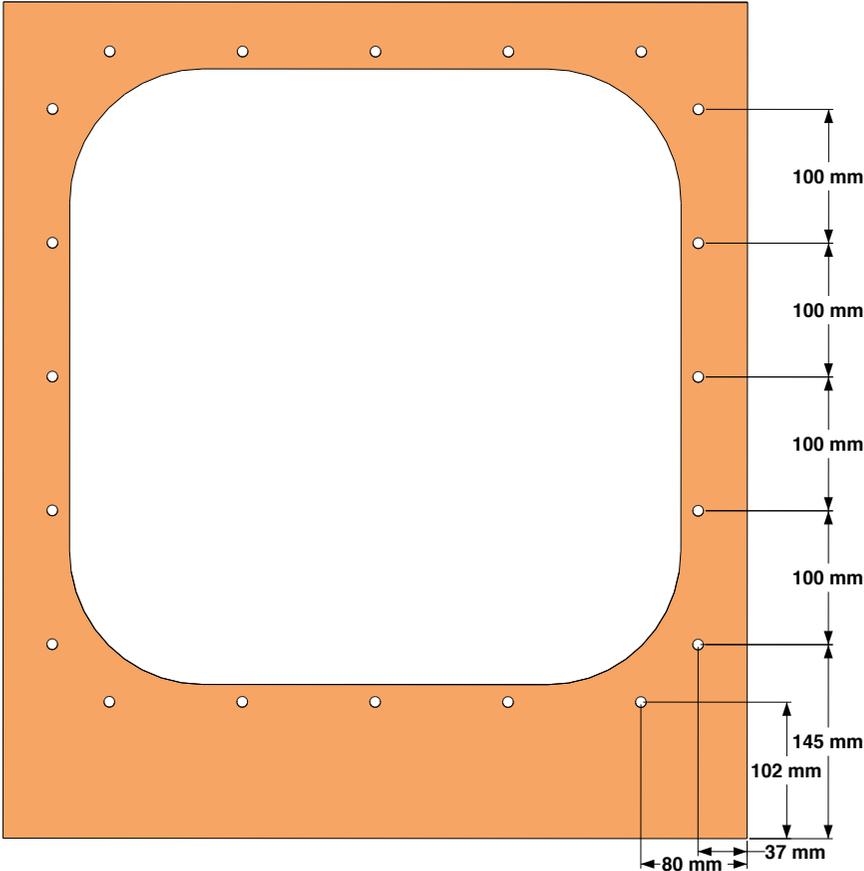
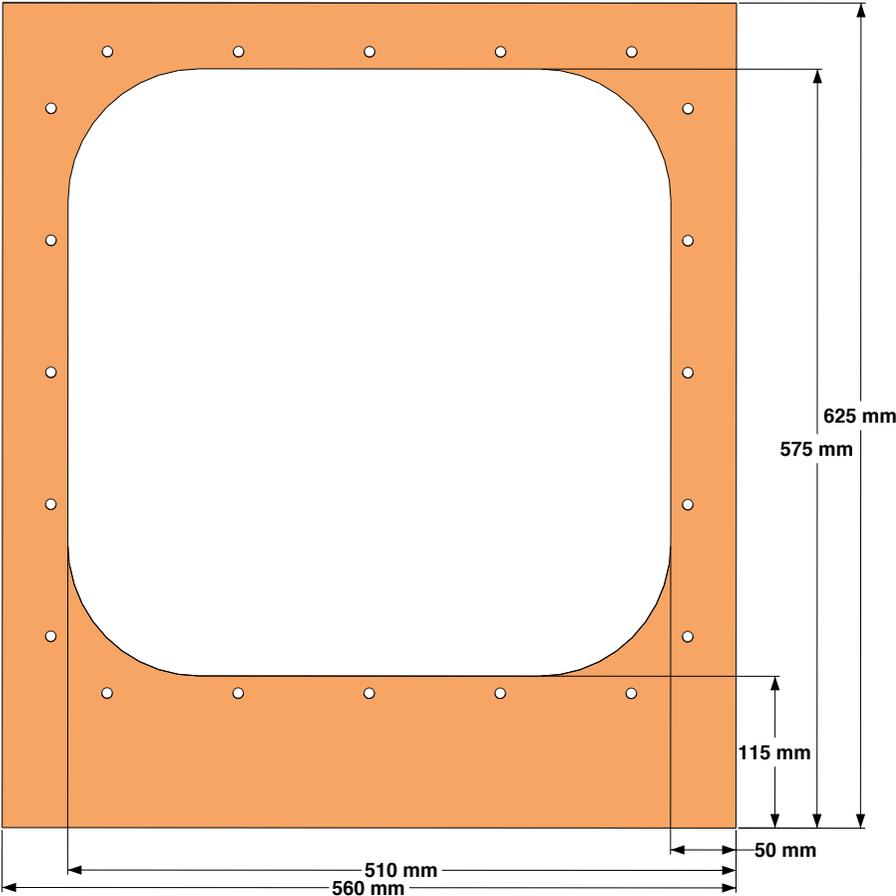
# BOTTOM VIEW



# BOTTOM VIEW



# BOTTOM VIEW



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